

December 27, 1995

MEMORANDUM

TO: Brian R. Monson, Chief
Operating Permits Bureau *Brm*
Permits and Enforcement

FROM: Harbi Elshafei, Air Quality Engineer *Harbi*
Operating Permits Bureau
Jose Fabile, Air Quality Engineer *JF*
Construction Permits Bureau

THROUGH: Susan J. Richards, Air Quality Permit Manager *SJR*
Operating Permits Bureau

SUBJECT: Technical Analysis for Tier II Operating Permit #077-00017
Lamb-Weston, Inc., American Falls, Idaho

PURPOSE

The purpose for this memorandum is to satisfy the requirements of IDAPA 16.01.01 Sections 400 through 406 (Rules for the Control of Air Pollution in Idaho) for issuing Operating Permits (OP).

FACILITY DESCRIPTION

Lamb-Weston, Inc., located in American Falls, Idaho, processes raw potatoes into frozen fried, dehydrated flakes, and hashbrown potato products for consumer sales. The facility consists of seven (7) raw potato storage buildings, three (3) cold storage warehouses, and one (1) processing area.

PROJECT DESCRIPTION

This project is for an Operating Permit for the following existing point and fugitive emission sources.

Point Sources:

- (1) Boiler #1 - Gas-fired with a maximum rated capacity of 116.3 MMBtu/hr. The boiler was constructed in September 1986 without obtaining a Permit to Construct (PTC).

Boiler #1's Specifications:

Manufacturer:	Cleaver Brooks
Model:	2800/DLDH-94
Max. Steam Cap.:	80,000 lbs/hr
Max. Heat Input:	116.3 MMBtu/hr
Fuel (Nat. Gas):	116,250 scfh

Stack Design Specifications:

Height:	51 feet (minimum)
Exit Diameter:	4.17 feet
Exit Gas Flow Rate:	37,579 acfm (at rated capacity)
Exit Temperature:	505°F (at rated capacity)

- (2) Boiler #2 - Gas-fired with a maximum rated capacity of 47.2 MMBtu/hr. The boiler was constructed in August 1965.

Boiler #2's Specifications:

Manufacturer:	Cleaver Brooks
Model:	1100/D-60
Max. Steam Cap.:	38,000 lbs/hr
Max. Heat Input:	47.2 MMBtu/hr
Fuel (Nat. Gas):	47,180 scfh

Stack Design Specifications:

Height: 51.1 feet
Exit Diameter: 3.33 feet
Exit Gas Flow Rate: 16,231 acfm (at rated capacity)
Exit Temperature: 567°F (at rated capacity)

- (3) Boiler #3 - Gas-fired with a maximum rated capacity of 46.8 MMBtu/hr. The boiler was constructed in August 1972.

Boiler #3's Specifications:

Manufacturer: Cleaver Brooks
Model: 1000/D-60
Max. Steam Cap.: 34,500 lbs/hr
Max. Heat Input: 46.8 MMBtu/hr
Fuel (Nat. Gas): 46,818 scfh

Stack Design Specifications:

Height: 51 feet
Exit Diameter: 3.33 feet
Exit Gas Flow Rate: 16,012 acfm (at rated capacity)
Exit Temperature: 561°F (at rated capacity)

- (4) Boiler #4 - Gas-fired with a maximum rated capacity of 2.3 MMBtu/hr. The boiler was constructed in 1986.

Boiler #4's Specifications:

Manufacturer: Cleaver Brooks
Model: #3
Max. Heat Input: 2.3 MMBtu/hr
Fuel (Nat. Gas): 2,143 scfh

Stack Design Specifications:

Height: 11 feet
Exit Diameter: 2.1 feet
Exit Gas Flow Rate: 889 acfm (at rated capacity)
Exit Temperature: 425°F (at rated capacity)

- (5) Gas Fired Dryer - Maximum heat input of eight (8) MMBtu/hr. The dryer was constructed in 1972.

Gas-Fired Dryer Specifications:

Manufacturer: National
Model: "Custom-Built"
Rated Heat Input: 8.0 MMBtu/hr

Stack Design Specifications:

Height: 36.1 feet
Exit Diameter: 3.33 feet
Exit Gas Flow Rates: 15,800 acfm
13,700 acfm
17,200 acfm
34,800 acfm
Exit Temperatures: 145°F
103°F
134°F
164°F

- (6) Steam Heated Dryer - The dryer was constructed in 1986 without obtaining a PTC.

Steam-Heated Dryer Specifications:

Manufacturer: National
Model: AN3-53527

Stack Design Specifications:

Height: 44.5 feet
Exit Diameter: 2.17 feet
Exit Gas Flow Rates: 11,430 acfm
14,410 acfm
10,150 acfm
15,625 acfm
Exit Temperature: 119°F
143°F
117°F
131°F

- (7) Drum Dryer 1 - The dryer was constructed in 1968.

Drum Dryer 1/Drum Dryer 2 Specifications:

Manufacturer: Blonox
Model: #17576

Flake Sizing Specifications:

Manufacturer: Ken Bratney Company
Model: "Custom-Built"

Stack Design Specifications:

Height: 41.9 feet
Exit Diameter: 12 feet
Exit Gas Flow Rate: 13,100 acfm
Exit Temperature : 103°F

- (8) Drum Dryer 2 - The dryer was constructed in 1968. Specifications are the same as in the Drum Dryer 1 section.

- (9) Line 1 & Line 2 Fryers - Fryers were constructed in 1986 without obtaining a PTC.

Deluge Fryer Specifications:

Manufacturer: Gem Equipment
Model: "Custom-Built"

Stack Design Specifications:

Height: 46 feet
Exit Diameter: 6.33 feet
Exit Gas Flow Rate: 23,794 acfm
Exit Temperature: 173°F

- (10) Flake Line Process Kice Filter - This source was constructed in 1986 without obtaining a PTC.

Stack Design Specifications:

Height: 43.1 feet
Exit Diameter: 0.88 feet
Exit Gas Flow Rate : 1,750 acfm
Exit Temperature : 97°F

- (11) Flake Line Process Pneumafil Air Filter - The pneumafil air filter controls particulate emissions from the tote dump, the hammer mill, the flake bagger, the coarse flour bagger, and the fine flour bagger. The source was constructed in 1978.

Stack Design Specifications:

Height:	33.3 feet
Exit Diameter:	1.42 feet
Exit Gas Flow Rate:	5,702 acfm
Exit Temperature:	70°F

Fugitive Sources:

- (1) Transfer Operations - There are two (2) enclosed areas, the receiving area of the main building and the raw storage buildings.
- (2) Paved and Unpaved Roads.
- (3) Air Makeup Units (AMUs) - There are sixteen (16) AMUs which provide space heat for large process areas.

AMUs Specifications:

Unit ID	Make/Model	BTU Rating
AMU-1:	Rapid SR-49	4.0 MMBtu/hr
AMU-2:	Rapid SR-36	1.75 MMBtu/hr
AMU-3:	Rapid SR-36	1.75 MMBtu/hr
AMU-4:	Rapid SR-40	2.25 MMBtu/hr
AMU-5:	Rapid SR-44	2.75 MMBtu/hr
AMU-6:	Rapid SR-40	3.50 MMBtu/hr
AMU-7:	Rapid SR-33	1.25 MMBtu/hr
AMU-8:	Rapid SR-24	1.00 MMBtu/hr
AMU-9:	Rapid SR-40	2.25 MMBtu/hr
AMU-10:	Rapid-SR-33	1.25 MMBtu/hr
AMU-11:	Hartzell G302	3.00 MMBtu/hr
AMU-12:	Maxon-Mixer	5.50 MMBtu/hr
AMU-13:	Hartzell	3.00 MMBtu/hr
AMU-14:	Hartzell	2.00 MMBtu/hr
AMU-15:	King DFOC-230B	5.50 MMBtu/hr
AMU-16:	King DFOC-230B	5.50 MMBtu/hr

- (4) Space Heaters - There are nine (9) room space heaters at the facility.

Space Heater Specifications:

Unit ID	Make/Model	BTU Rating
Chemical Room Htr.:	Rapid Draft Blaster	0.80 MMBtu/hr
Trash Compactor Htr.:	Rapid Draft Blaster	0.80 MMBtu/hr
Sanitation Store Rm. Htr.:	Rapid Draft Blaster	0.80 MMBtu/hr
NE Hasbrowm Rm. Htr.:	Rapid Draft Blaster	0.80 MMBtu/hr
USDA Htr.:	Rapid Draft Blaster	0.80 MMBtu/hr
Boiler Rm South Htr.:	Rapid Draft Blaster	0.80 MMBtu/hr
Boiler Rm South Htr.:	Rapid Draft Blaster	0.80 MMBtu/hr
Receiving South Htr.:	Aerovent Dr Heater	0.75 MMBtu/hr
Receiving North Htr.:	Aerovent Dr Heater	0.75 MMBtu/hr

A more detailed process description is found in the operating permit application materials.

SUMMARY OF EVENTS

On January 17, 1995, DEQ received an application for a Tier II Operating Permit. On February 9, 1995, the application was determined incomplete. On March 1, 1995, information was received addressing the incompleteness determination. On March 14, 1995, the applicant submitted a modified copy of Tier II application. In the modified copy the applicant separated the confidential materials from non-confidential, identified each page of information as confidential, and included a certification that the information qualifies for confidential treatment in accordance with Idaho Code 39-111. Therefore, the applicant has followed the confidential information procedure outlined by IDAPA 16.01.01.126. On April 6, 1995, Lamb-Weston submitted a supplemental data regarding inadvertent errors in the original Tier II application package. After reviewing all applicable federal and state rules and regulations, the application was determined complete on April 12, 1995. On May 26, 1995, DEQ received additional information corrected the Ducon's scrubber control efficiency value. On June 27, 1995, DEQ received a letter from Lamb-Weston in which the facility requested to amend the Tier II OP application.

A public comment period was held from September 12, 1995, through October 11, 1995.

DISCUSSION

1. Emission Estimates

Emission estimates were provided by Lamb-Weston and can be seen in the March 14, 1995, application and in June 27, 1995, amended application submittal. DEQ also estimated the PM, PM-10, SO₂, NO_x, CO, and the VOC emissions by using emission factors from AP-42, Section 1.4 (natural gas combustion) and from emission factors developed from specific emission testing performed at the facility and results from similar equipment testing at other Lamb-Weston facilities. Oxides of nitrogen (NO_x) emission rates for the Boiler #1 were derived from the NO emission standard of 0.1 lb/MMBtu (see 40 CFR 60 subpart Db). The calculation spreadsheet is in Table-1, Appendix A.

Lamb-Weston conducted a particulate matter (PM) source test on Line 1 steam dryer. Based on that source test, PM emission factor of .0452 lb/ton was established and used to calculate PM emission rates from Line 1 Dryer, Line 2 Dryer, Drum Dryer 1, and Drum Dryer 2 Stacks. Also, a carbon monoxide (CO) and oxides of nitrogen (NO_x) source tests were conducted on Line 2 Natural Gas Dryer stack. Emission factors of 357 lb/MM CF and 152.25 lb/MM CF for CO and NO_x were developed, respectively, and used to calculate emissions of these two (2) gases from the Line 2 Dryer. PM and VOCs emissions from Line 1 and Line 2 Fryers were estimated by using emission factors developed from source tests of a similar fryer at the Lamb-Weston facility in Hermiston, Oregon.

Particulate matter potential to emit (PTE) from some sources (i.e., Kice and the Pneumafil filters) at the facility are greater than 100 tons per year (T/yr) major source threshold limit. The PTE for these sources are estimated by using the maximum capacity of each source, using 8760 hours of operation per year, and by excluding the pollution control equipment. PM short-term and long-term emission limits from the Kice and Pneumafil filters, in the final OP, are calculated by including the pollution control equipment efficiencies. These emission limits can be seen in Appendix A of the final Tier II OP.

All PM emissions are assumed to be PM-10.

NO_x is the pollutant emitted in the greatest amount from the fuel burning equipment. NO_x potential to emit as estimated by the applicant and based on 8,760 hours of operation per year is 157.20 tons per year (T/yr). The applicant chose to net out of Tier I permitting by limiting the potential to emit of NO_x emissions to a less than 100 tons per year (T/yr). Applicant accepted an enforceable limit on NO_x emissions of 62.64 tons per year (T/yr). To limit the facility on this amount of NO_x emissions, a total maximum natural gas usage for the entire facility must be limited to less than 1,099 million cubic feet per year.

Compliance determination for the gas usage can be verified by reporting the annual gas usage to DEQ on a rolling annual basis.

Fugitive particulate emissions from the transfer operations and from the paved and unpaved roads were calculated by the applicant by using emission factors from AP-42, Sections 11.2.1.2 and 11.2.3.3. Fugitive emissions generated from transfer points, paved/unpaved roads, and all other sources of fugitive emissions at the facility shall be controlled in accordance with IDAPA 16.01.01.650 of the Rules.

Fugitive NO_x emissions from the AMUs and the space heaters (that are greater than 500,000 Btu heat input) were estimated by using emission factors found in AP-42, Section 1.4-1. It was assumed that burners operate 3,360 hours per year.

Fugitive emission calculations can be seen in the application materials.

2. Modeling

Emission rates from eleven (11) emission point sources at the facility were input into EPA approved ISC2 dispersion model. Emissions of PM-10 and NO_x were converted into grams per second (g/s) rates from the stacks that emit these pollutants. Fugitive emissions from the facility were not modeled.

The modeling results predicted a twenty-four (24) hour maximum concentrations for PM-10 of 61.5 µg/m³ and an annual maximum of 11.4 µg/m³. The predicted maximum annual NO_x emissions were 19.9 µg/m³. The modeling input and results are shown in Appendix B.

The predicted PM-10 and NO_x impacts were determined to be below the National Ambient Air Quality Standards (NAAQS).

A technical memorandum by Chris Johnson, DEQ Meteorologist, regarding the modeling of PM-10 and NO_x emissions from the facility is included in Appendix B.

3. Area Classification

Lamb-Weston facility is located in American Falls, Power County, Idaho, as shown in Figure 1. This area is located in AQCR 61. The area is classified as attainment or unclassifiable for all federal and state criteria air pollutants (i.e., PM, PM-10, CO, NO_x, and SO₂).

4. Facility Classification

The facility is not a designated facility as defined in IDAPA 16.01.01.25. The facility is classified as an A2 source because the actual emissions of NO_x is less than 100 tons per year (T/yr).

5. Regulatory Review

This operating permit is subject to the following permitting requirements:

- | | |
|------------------------------------|--|
| a. <u>IDAPA 16.01.01.401</u> | Tier II Operating Permit. |
| b. <u>IDAPA 16.01.01.403</u> | Permit Requirements for Tier II Sources. |
| c. <u>IDAPA 16.01.01.404.01(c)</u> | Opportunity for Public Comment. |
| d. <u>IDAPA 16.01.01.404.04</u> | Authority to Revise Operating Permits. |
| e. <u>IDAPA 16.01.01.406</u> | Obligation to Comply. |
| f. <u>IDAPA 16.01.01.470</u> | Permit Application Fees for Tier II Permits. |
| g. <u>IDAPA 16.01.01.625</u> | Visible Emission Limitation. |
| h. <u>IDAPA 16.01.01.650</u> | General Rules for the Control of Fugitive Dust. |
| i. <u>IDAPA 16.01.01.675</u> | Fuel Burning Equipment -- Particulate Matter. |
| j. <u>40 CFR 60 Subpart Db</u> | Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units. |

FEES

Fees apply to this facility in accordance with IDAPA 16.01.01.470. The facility is subject to permit application fees for Tier II permits of five hundred dollars (\$500.00). IDAPA 16.01.01.470 became effective on March 7, 1995.

RECOMMENDATIONS

Based on the review of the Operating Permit application and on applicable state and federal regulations concerning the permitting of air pollution sources, we recommend that Lamb-Weston, Inc., in American Falls be issued a Tier II Operating Permit for the sources that exist at the facility. An opportunity for public comment shall be provided as required by IDAPA 16.01.01.404.01. We also recommend that the facility be notified of the Tier II permit fee requirement in writing. This fee will be applicable upon issuance of the permit.

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cc: J. Johnston, SEIRO
S. Richards
Source File
H. Elshafei
J. Fabile
COF

Table 1

Maximum hourly fuel usage (MMCF/hr) was used for hourly emission rate calculation. Normal annual fuel usage was used for annually emission rate calculation.
 The information used here based on most recent submittal, 6/27/95)
 Nature Gas Heating Value 950 mmbtu/mmcf

Description			Fuel Usage (a)				Operating Hour		Combustion Rate		Emission Factor				Uncontrolled Emission		Uncontrolled Emission		Uncontrolled Emission		Uncontrolled Emission		Uncontrolled Emission		Uncontrolled Emission		Uncontrolled Emission		Uncontrolled Emission		Uncontrolled Emission			
Fuel Combustion	Shortest	Normal	Max	Normal	Max	Normal	Max	Normal	Max	Normal	Shortest	PM/PM10	NOx	SO2	CO	VOC	Uncontrolled Emission		Uncontrolled Emission		Uncontrolled Emission		Uncontrolled Emission		Uncontrolled Emission		Uncontrolled Emission		Uncontrolled Emission		Uncontrolled Emission			
																	PM/PM-10 (lb/hr)	PM/PM-10 (t/y)	NOx (lb/hr)	NOx (t/y)	SO2 (lb/hr)	SO2 (t/y)	CO (lb/hr)	CO (t/y)	VOC (lb/hr)	VOC (t/y)								
Boiler #1 (c)	0.11825	78.018	110.4	478.1	1018.4	5760	8760	0.08318	0.11625	3	95	0.6	40	1.411	0.25	0.35	0.72	1.53	7.80	11.04	22.76	48.37	0.05	0.07	0.14	0.31	3.33	4.65	8.58	20.37	0.12	0.16	0.34	0.72
Boiler #2	0.04718	32.088	44.82	194.4	413.3	5760	8760	0.03375	0.047180	13.7	140	0.6	35	2.784	0.46	0.65	1.33	2.83	4.73	8.61	13.61	28.83	0.02	0.03	0.06	0.12	1.18	1.85	3.40	7.23	0.09	0.13	0.27	0.58
Boiler #3	0.046816	31.823	44.48	193	410.13	5760	8760	0.03351	0.046816	13.7	140	0.6	35	2.784	0.46	0.64	1.32	2.81	4.69	8.55	13.51	28.71	0.02	0.03	0.06	0.12	1.17	1.84	3.38	7.18	0.09	0.13	0.27	0.57
Boiler #4	2.25	2.25	2.25	5.4	18.77	3360	8760	0.00181	0.002143	12	100	0.6	21	5.28	0.02	0.03	0.03	0.11	0.16	0.21	0.27	0.84	0.00	0.00	0.00	0.01	0.03	0.04	0.06	0.20	0.01	0.01	0.01	0.05
Gas Fired Dryer (a)	8	8	8	43.88	86.74	5760	8760	0.00762	0.007618	12	152.25	0.6	357	5.28	0.09	0.09	0.28	0.40	1.16	1.16	3.34	5.08	0.00	0.00	0.01	0.02	2.72	2.72	7.83	11.81	0.04	0.04	0.12	0.18
Product Drying			Operating Hr		Emission Factor		Ctrl Eff		Control Emission		Uncontrol Emission																							
			Normal	Max	PM/PM10	VOC		PM/PM-10 (lb/hr)	PM/PM-10 (t/y)	VOC (lb/hr)	VOC (t/y)	Normal	Max	Normal	Max	Normal	Max	Normal	Max															
			Hours		lb/ton wet				Normal	Max	Normal	Max	Normal	Max	Normal	Max	Normal	Max																
Gas Fired Dryer (a)			5760	8760	0.045				0.410	0.410	1.181	1.795																						
Steam Heated Dryer (a)			5760	8760	0.045				1.600	1.600	4.806	7.008																						
Drum Dryer 1 (a)			5760	8760	0.045				0.132	0.132	0.379	0.577																						
Drum Dryer 2 (a)			5760	8760	0.045				0.132	0.132	0.379	0.577																						
Deluge Fryer/Ducon Scrub			5760	8760	0.135	0.177			5.315	5.315	15.307	23.280	6.969	6.969	20.070	30.522																		
Kice Filter			5760	8760	70	89.95%			0.03	0.03	0.082	0.125																						
Pneumafil Filter			5760	8760	70	89.96%			0.11	0.11	0.330	0.502																						

Note:

(a) Emission Factor(EF) of PM, CO, and NOx derived from source test. $(x \text{ lb/hr}) / (8 \text{ mmbtu} / (950 \text{ mmbtu} / \text{mmcf})) = \text{EF lb/mmcf}$

(b) Emission Factor (EF) for PM & VOC derived from source test.

(c) The source is subject to 40 CFR 60 Sup. Db.. The emission limit of that part must be used. Boiler #1 EF = $(0.1 \text{ lb/mmcf}) * (1000 \text{ mmbtu} / \text{mmcf}) = 100 \text{ lb/mmcf}$

Example: Gas Fired Dryer Emission Rate

Gas Fired Dryer Emission Rate = Combustion Emission Rate + Production Emission Rate.

Total = $0.09 \text{ lb/hr} + 0.410 \text{ lb/hr} = 0.5 \text{ lb/hr}$

(d) Unit conversion: $x \text{ mmcf/hr} * 950 \text{ mmbtu} / \text{mmcf} = y \text{ mmbtu/hr}$

(e) Ctrl Eff = control efficiency

APPENDIX A

Maximum hourly fuel usage (MMCF/hr) was used for h
The information used here based on most recent submit
Nature Gas Heating Value 950 mmbtu/MMCF

Description		Fuel Usage (d)					
Fuel Combustion	Maximum	Normal		Max		Normal	
		MMBtu/hr		MMBtu/hr		MMBtu/hr	
Boiler #1 (c)	0.11625	79.018	110.4	479.1	1018.4		
Boiler #2	0.04718	32.089	44.82	194.4	413.3		
Boiler #3	0.046818	31.823	44.48	193	410.13		
	mmbtu/hr						
Boiler #4	2.25	2.25	2.25	5.4	18.77		
Gas Fired Dryer (a)	8	8	8	43.89	66.74		
Product Drying		Operating Hr		Emission			
		Normal	Max	PM/PM1			
		Hours		lb/ton w			
Gas Fired Dryer (a)		5760	8760	0.045			
Steam Heated Dryer (a)		5760	8760	0.045			
Drum Dryer 1 (a)		5760	8760	0.045			
Drum Dryer 2 (a)		5760	8760	0.045			
Deluge Fryer/Ducon Scrub		5760	8760	0.135			
Kice Filter		5760	8760	70			
Pneumafil Filter		5760	8760	70			

Note:
(a) Emission Factor(EF) of PM, CO, and NOx derived from
(b) Emission Factor (EF) for PM & VOC derived from sor
(c) The source is subject to 40 CFR 60 Sup. Db.. The ex
Example: Gas Fired Dryer Emission Rate
Gas Fired Dryer Emission Rate = Combustion Emission
Total = 0.09 lb/hr + 0.410 lb/hr = 0.5 lb/hr
(d) Unit conversion: x mmcf/hr*950mmbtu/MMCF = y m
(e) Cntl Eff = control efficiency

LAMB-WESTON, INCORPORATED (AMERICAN FALLS)

EXAMPLE OF CALCULATIONS

Prepared by Harbi Elshafei

BOILER #1

Boiler's Capacity	116,250 ft ³ /hr
NO _x Standard (40CFR 60, Subpart Db)	0.1 lb/MMBtu
N.G. Heat Content	950 Btu/ft ³

Short-Term Emission Limits

The short-term emission limits are calculated based on maximum fuel consumption of 1,018.35 MMft³/yr and maximum operating hours of 8,760 hrs/yr.

1,018.35 MMft ³	1 yr	
yr	8,760 hrs	= 116,250 ft ³ /hr
116,250 ft ³	950 Btu	
hr	ft ³	= 110.44 MMBtu/hr

$$\begin{aligned}
 \text{NO}_x \text{ short-term emissions} &= \frac{0.1 \text{ lb}}{\text{MMBtu}} \times \frac{110.44 \text{ MMBtu}}{\text{hr}} \\
 &= 11.04 \text{ lb/hr}
 \end{aligned}$$

Long-Term Emission Limits

The long-term emission limits are calculated based on normal fuel consumptions of 479.1 MMft³/yr and on normal operating hours of 5,760 hrs/yr.

479.1 MMft ³	1 yr	
yr	5,760 hrs	= 83,177 ft ³ /hr
83,177 ft ³	950 Btu	
hr	ft ³	= 79.02 MMBtu/hr

$$\begin{aligned}
 \text{NO}_x \text{ long-term emissions} &= \frac{0.1 \text{ lb}}{\text{MMBtu}} \times \frac{79.02 \text{ MMBtu}}{\text{hr}} \times \frac{1 \text{ Ton}}{2,000 \text{ lb}} \times \frac{5,760 \text{ hrs}}{1 \text{ yr}} \\
 &= 22.76 \text{ T/yr}
 \end{aligned}$$

BOILER #2

Boiler's maximum capacity = 413.30 MMBtu/yr
= 47,180 ft³/hr

$$\frac{47,180 \text{ ft}^3}{\text{hr}} \times \frac{950 \text{ Btu}}{\text{ft}^3} = 44.82 \text{ MMBtu/hr}$$

Therefore, the boiler is a Small Industrial boiler (AP-42, Table 1.4-2).

Boiler's normal firing rate = 194.4 MMft³/yr
= 33,757 ft³/hr

NO_x Short-Term Emission Rates

EF = 140 lb/10⁶ ft³

$$\frac{47,180 \text{ ft}^3}{\text{hr}} \times \frac{140 \text{ lb}}{10^6 \text{ ft}^3} = 6.61 \text{ lb/hr}$$

NO_x Long-Term Emission Rates

$$\frac{140 \text{ lb}}{10^6 \text{ ft}^3} \times \frac{33,757 \text{ ft}^3}{\text{hr}} \times \frac{1 \text{ Ton}}{2,000 \text{ lb}} \times \frac{5,760 \text{ hr}}{1 \text{ yr}} = 13.61 \text{ T/yr}$$

BOILER #3

Boiler's maximum capacity = 410.30 Mmft³/yr
= 46,818 ft³/hr

46,818 ft ³	950 Btu	
hr	ft ³	= 44.48 MMBtu/hr

Therefore, the boiler is a Small Industrial boiler (AP-42, Table 1.4-2).

Boiler's normal firing rate = 193.00 Mmft³/yr
= 33,498 ft³/hr

NO_x Short-Term Emission Rates

EF = 140 lb/10⁶ ft³

46,818 ft ³	140 lb	
hr	10 ⁶ ft ³	= 6.55 lb/hr

NO_x Long-Term Emission Rates

33,498 ft ³	140 lb	1 Ton	5,760 hr
hr	10 ⁶ ft ³	2,000 lb	1 yr

= 13.51 T/yr

BOILER #4

Boiler's maximum capacity = 18.77 Mmft³/yr
= 2,143 ft³/hr

2,143 ft ³	950 Btu
hr	ft ³

= 2.04 MMBtu/hr

The boiler is a Commercial boiler (AP-42, Table 1.4-2).

Boiler's normal firing rate = 5.40 MMft³/yr
= 937.50 ft³/hr

NO_x Short-Term Emission Rates

EF = 100 lb/10⁶ ft³

2,143 ft ³	100 lb
hr	10 ⁶ ft ³

= 0.21 lb/hr

NO_x Long-Term Emission Rates

937.50 ft ³	100 lb	1 Ton	5,760 hr
hr	10 ⁶ ft ³	2,000 lb	1 yr

= 0.27 T/yr

GAS FIRED DRYER EMISSIONS

Example of PM emission rate

PM emissions result from burning natural gas and from drying potatoes.

PM Emissions from Drying Potatoes

EF = 0.0452 lb/ton (based on a source test conducted by L-W on the steam dryer)

PM emissions resulting from drying potatoes = 0.41 lb/hr

PM Emissions from Natural Gas Combustion

EF = 12 lb/10⁶ ft³ (AP-42, Table 1.4-1)

$$\frac{12 \text{ lb}}{10^6 \text{ ft}^3} \times \frac{66.74 \times 10^6 \text{ ft}^3}{8,760 \text{ hr}} = 0.09 \text{ lb/hr}$$

Short-term emissions = 0.41 + 0.09 = 0.50 lb/hr

Yearly Emissions

$$\frac{0.50 \text{ lb}}{\text{hr}} \times \frac{1 \text{ Ton}}{2,000 \text{ lb}} \times \frac{5,760 \text{ hr}}{1 \text{ yr}} = \underline{1.44 \text{ Ton/yr}}$$

APPENDIX B

June 2, 1995

M E M O R A N D U M

TO: Robert Wilkosz, Chief, Technical Services Bureau (TSB),
Permits and Enforcement (P&E)

FROM: Chris Johnson, Air Quality Meteorologist, TSB, P&E

THRU: Avijit Ray, Environmental Sciences Manager, TSB, P&E

SUBJECT: Modeling/Impact Assessment of Lamb Weston (American
Falls)

1. SUMMARY

The applicant operates a food processing facility in American Falls, and is requesting a Tier II Operating Permit. The main pollutants emitted are NOx and particulates. Particulate and NO2 emissions from the facility were modeled. ✓

Building downwash played a part in the impact assessment because the stacks were not that high above the buildings. Maximum impacts for each pollutant were predicted on the public road between their boilers and their main processing facility. They were predicted to be within the applicable NAAQS limits.

2. DISCUSSION

2.1 Project Description

The applicant operates a Tier II source in Power County. Emissions result from food processing operations in a long main building, and from boilers across the street.

2.2 Applicable Air Quality Impact Limits

The area, in Power County, is considered attainment or unclassified for all pollutants. The PM-10 NAAQS of 150 ug/m3 24 hr average and 50 ug/m3 annual average, and the NO2 NAAQS of 100 ug/m3 annual average will determine allowable impacts.

2.3 Background Concentrations

PM-10 background concentration was estimated to be 80 ug/m3 24 hour average and 32 ug/m3 annual average, excluding impacts from the modeled facility through regional monitoring. NO2 background was conservatively estimated to be 50 ug/m3.

2.4 Co-contributing Sources

No co-contributing sources were identified.

Memo to Robert Wilkosz
June 2, 1995
Page 2

2.5 Modeling Impact Assessment

The emissions from eleven stacks were modeled with the Industrial Source Complex model, ISC2. Actual Pocatello 1983 meteorology was used. Modeling results showed that PM-10 and NO2 would be within applicable standards. Maximum impacts for all pollutants and all averaging periods were predicted to occur on the public road between the main plant and the boiler plant.

Fugitive emissions from outdoor product handling were not analyzed because the emissions mainly occur behind the process building, blocked from impacting the public, and reasonably controlled.

The chart below compares predicted maximum pollutant concentrations, and their comparison with applicable air pollutant impact limits.

<u>POLLUTANT</u>	<u>Emiss.</u> <u>(g/s)</u>	<u>Predicted</u> <u>conc.</u> <u>(ug/m3)</u>	<u>Ave.</u> <u>Per.</u>	<u>Allowable</u> <u>conc.</u> <u>(ug/m3)</u>	<u>Impact</u> <u>limit %</u>
PM-10 (source)	1.25	61.5	24 hr	150.	41.0%
PM-10 (post-constr)	1.25	141.5	24 hr	150.	94.3%
PM-10	1.25	11.4	ann	50.	22.8%
PM-10 (post-constr)	1.25	43.4	ann	50.	86.8%
NO2 (source)	2.81	19.9	ann	100.	19.9%
NO2 (post-constr)	2.81	69.9	ann	100.	69.9%

3. MODELING RESULTS

See attachments. Electronic copies of the modeling are saved on disk at \ISC2\LAMWESTN.OUT.

CJ/ve lamwestn.ccc

Attachments

cc: H. Elshafei
COF (w/o attachments)

(-184, 244.40)

(-072, 244)

Truck Scales

(1) (-2 1/16, 3 10/16) (-42.9, 92.7)
(2) (-1 7/16, 3 7/16) (-31.4, 92.7)

Rail Storage

Elevation = 12.5 m

(3) (-2 1/16, 2 7/16) (-122, 61.94)

Segment 5
(Impound Road)

Trans (for operation of outfalls)

R & W

Elevation = 11.5 m

Transfer of water (Accessing)

Receiving

Elevation = 12.4 m

(0,0)

USDA

Elevation = 9.6 m

Elevation = 6.9 m

Rail Sporn

(-122, -61.96)
(-4 1/16, -2 7/16)

(-4 1/16, -2 7/16) (-0.48, -61.48)

Elevation = 9.5 m

Drainage

Drainage

Drainage

(11) (-6 3/16, -4 1/16)
(-122, -153.22)

(10) (-1 7/16, -5") (-31.3, -152.5)

(12) (-4 1/16, -4 1/16) (-0.48, -123)

AMU-15
AMU-16

Segment (Impound Road)
(#11)

Boiler #4
Elevation = 12.7 m
Boiler #3
Boiler #2
Boiler #1

Land
AMERICAN F
LAND WESTERN ROY
AMERICAN FALLS, IDAHO
All plans, designs, and data are the property of and remain the confidential property of the undersigned.

CO STARTING
 CO TITLEONE Lamb Weston Operating Permit PM-10, NO2
 CO MODELOPT CONC RURAL NOSTD NOCALM
 CO AVERTIME 24 PERIOD
 CO POLLUTID OTHER
 CO DCAYCOBF .000000
 CO RUNORNOT RUN
 CO ERRORFIL ERRORS.OUT
 CO FINISHED

SO STARTING

** Source Location Cards:

**	SRCID	SRC TYP	XS	YS	ZS
SO LOCATION	1	POINT	-255.52	-38.13	0.
SO LOCATION	2	POINT	-255.52	-32.42	0.
SO LOCATION	3	POINT	-255.52	-24.80	0.
SO LOCATION	4	POINT	-266.88	-22.88	0.
SO LOCATION	5	POINT	-76.25	-45.75	0.
SO LOCATION	6	POINT	-93.42	.00	0.
SO LOCATION	7	POINT	-87.72	-66.76	0.
SO LOCATION	8	POINT	-83.88	-66.76	0.
SO LOCATION	9	POINT	-91.50	-50.55	0.
SO LOCATION	10	POINT	-82.01	-87.72	0.
SO LOCATION	11	POINT	-61.00	-72.47	0.
SO LOCATION	51	POINT	-255.52	-38.13	0.
SO LOCATION	52	POINT	-255.52	-32.42	0.
SO LOCATION	53	POINT	-255.52	-24.80	0.
SO LOCATION	54	POINT	-266.88	-22.88	0.
SO LOCATION	55	POINT	-76.25	-45.75	0.

** Source Parameter Cards:

**	POINT:	SRCID	QS	HS	TS	VS	DS
**	VOLUME:	SRCID	QS	HS	SYINIT	SZINIT	
**	AREA:	SRCID	QS	HS	XINIT		
SO SRCPARAM	1	.1440000	15.540	535.9300	13.9000	1.27	
SO SRCPARAM	2	.0580000	15.540	570.3700	9.4100	1.01	
SO SRCPARAM	3	.0580000	15.540	567.0400	9.2800	1.01	
SO SRCPARAM	4	.0020000	3.350	491.4800	1.3200	.63	
SO SRCPARAM	5	.0680000	11.000	307.0400	11.8300	1.01	
SO SRCPARAM	6	.2020000	13.560	325.9300	17.6200	.66	
SO SRCPARAM	7	.0160000	12.770	312.5900	.5800	3.66	
SO SRCPARAM	8	.0160000	13.440	312.5900	.5000	3.66	
SO SRCPARAM	9	.6720000	14.020	351.4800	3.8200	1.93	
SO SRCPARAM	10	.0040000	13.140	309.2600	14.5300	.27	
SO SRCPARAM	11	.0140000	10.150	294.2600	18.1800	.43	
SO SRCPARAM	51	1.4670000	15.540	535.9300	13.9000	1.27	
SO SRCPARAM	52	.5960000	15.540	570.3700	9.4100	1.01	
SO SRCPARAM	53	.5910000	15.540	567.0400	9.2800	1.01	
SO SRCPARAM	54	.0200000	3.350	491.4800	1.3200	.63	
SO SRCPARAM	55	.1460000	11.000	307.0400	11.8300	1.01	

SO BUILDHGT	1	12.70	12.70	12.70	12.70	12.70	12.70
SO BUILDHGT	1	12.70	12.70	12.70	12.70	12.70	12.70
SO BUILDHGT	1	12.70	12.70	12.70	12.70	12.70	12.70
SO BUILDHGT	1	12.70	12.70	12.70	12.70	12.70	12.70
SO BUILDHGT	1	12.70	12.70	12.70	12.70	12.70	12.70
SO BUILDHGT	1	12.70	12.70	12.70	12.70	12.70	12.70
SO BUILDWID	1	28.50	32.13	34.78	36.38	36.68	36.25
SO BUILDWID	1	34.52	31.74	28.00	31.74	34.52	36.25
SO BUILDWID	1	36.88	36.38	34.78	32.13	28.50	24.00

SO BUILDWID 1	28.50	32.13	34.78	36.38	36.88	36.25
SO BUILDWID 1	34.52	31.74	28.00	31.74	34.52	36.25
SO BUILDWID 1	36.88	36.38	34.78	32.13	28.50	24.00
SO BUILDHGT 2	12.70	12.70	12.70	12.70	12.70	12.70
SO BUILDHGT 2	12.70	12.70	12.70	12.70	12.70	12.70
SO BUILDHGT 2	12.70	12.70	12.70	12.70	12.70	12.70
SO BUILDHGT 2	12.70	12.70	12.70	12.70	12.70	12.70
SO BUILDHGT 2	12.70	12.70	12.70	12.70	12.70	12.70
SO BUILDHGT 2	12.70	12.70	12.70	12.70	12.70	12.70
SO BUILDWID 2	28.50	32.13	34.78	36.38	36.88	36.25
SO BUILDWID 2	34.52	31.74	28.00	31.74	34.52	36.25
SO BUILDWID 2	36.88	36.38	34.78	32.13	28.50	24.00
SO BUILDWID 2	28.50	32.13	34.78	36.38	36.88	36.25
SO BUILDWID 2	34.52	31.74	28.00	31.74	34.52	36.25
SO BUILDWID 2	36.88	36.38	34.78	32.13	28.50	24.00
SO BUILDHGT 3	12.70	12.70	12.70	12.70	12.70	12.70
SO BUILDHGT 3	12.70	12.70	12.70	12.70	12.70	12.70
SO BUILDHGT 3	12.70	12.70	12.70	12.70	12.70	12.70
SO BUILDHGT 3	12.70	12.70	12.70	12.70	12.70	12.70
SO BUILDHGT 3	12.70	12.70	12.70	12.70	12.70	12.70
SO BUILDHGT 3	12.70	12.70	12.70	12.70	12.70	12.70
SO BUILDWID 3	28.50	32.13	34.78	36.38	36.88	36.25
SO BUILDWID 3	34.52	31.74	28.00	31.74	34.52	36.25
SO BUILDWID 3	36.88	36.38	34.78	32.13	28.50	24.00
SO BUILDWID 3	28.50	32.13	34.78	36.38	36.88	36.25
SO BUILDWID 3	34.52	31.74	28.00	31.74	34.52	36.25
SO BUILDWID 3	36.88	36.38	34.78	32.13	28.50	24.00
SO BUILDHGT 4	12.70	12.70	12.70	12.70	12.70	12.70
SO BUILDHGT 4	12.70	12.70	12.70	12.70	12.70	12.70
SO BUILDHGT 4	12.70	12.70	12.70	12.70	12.70	12.70
SO BUILDHGT 4	12.70	12.70	12.70	12.70	12.70	12.70
SO BUILDHGT 4	12.70	12.70	12.70	12.70	12.70	12.70
SO BUILDHGT 4	12.70	12.70	12.70	12.70	12.70	12.70
SO BUILDWID 4	28.50	32.13	34.78	36.38	36.88	36.25
SO BUILDWID 4	34.52	31.74	28.00	31.74	34.52	36.25
SO BUILDWID 4	36.88	36.38	34.78	32.13	28.50	24.00
SO BUILDWID 4	28.50	32.13	34.78	36.38	36.88	36.25
SO BUILDWID 4	34.52	31.74	28.00	31.74	34.52	36.25
SO BUILDWID 4	36.88	36.38	34.78	32.13	28.50	24.00
SO BUILDHGT 5	11.40	11.40	11.40	11.40	11.40	11.40
SO BUILDHGT 5	11.40	11.40	11.40	11.40	11.40	11.40
SO BUILDHGT 5	11.40	11.40	11.40	11.40	11.40	11.40
SO BUILDHGT 5	11.40	11.40	11.40	11.40	11.40	11.40
SO BUILDHGT 5	11.40	11.40	11.40	11.40	11.40	11.40
SO BUILDHGT 5	11.40	11.40	11.40	11.40	11.40	11.40
SO BUILDWID 5	103.24	141.75	175.95	204.80	227.43	243.15
SO BUILDWID 5	251.48	252.17	245.90	257.90	262.06	258.26
SO BUILDWID 5	246.61	227.47	201.41	169.24	131.92	90.70
SO BUILDWID 5	103.24	141.75	175.95	204.80	227.43	243.15
SO BUILDWID 5	251.48	252.17	245.90	257.90	262.06	258.26
SO BUILDWID 5	246.61	227.47	201.41	169.24	131.92	90.70
SO BUILDHGT 6	11.40	11.40	11.40	11.40	11.40	11.40
SO BUILDHGT 6	11.40	11.40	11.40	11.40	11.40	11.40

[illegible]

SO BUILDWID 51	34.52	31.74	28.00	31.74	34.52	36.25
SO BUILDWID 51	36.88	36.38	34.78	32.13	28.50	24.00
SO BUILDWID 51	28.50	32.13	34.78	36.38	36.88	36.25
SO BUILDWID 51	34.52	31.74	28.00	31.74	34.52	36.25
SO BUILDWID 51	36.88	36.38	34.78	32.13	28.50	24.00
SO BUILDHGT 52	12.70	12.70	12.70	12.70	12.70	12.70
SO BUILDHGT 52	12.70	12.70	12.70	12.70	12.70	12.70
SO BUILDHGT 52	12.70	12.70	12.70	12.70	12.70	12.70
SO BUILDHGT 52	12.70	12.70	12.70	12.70	12.70	12.70
SO BUILDHGT 52	12.70	12.70	12.70	12.70	12.70	12.70
SO BUILDHGT 52	12.70	12.70	12.70	12.70	12.70	12.70
SO BUILDWID 52	28.50	32.13	34.78	36.38	36.88	36.25
SO BUILDWID 52	34.52	31.74	28.00	31.74	34.52	36.25
SO BUILDWID 52	36.88	36.38	34.78	32.13	28.50	24.00
SO BUILDWID 52	28.50	32.13	34.78	36.38	36.88	36.25
SO BUILDWID 52	34.52	31.74	28.00	31.74	34.52	36.25
SO BUILDWID 52	36.88	36.38	34.78	32.13	28.50	24.00
SO BUILDHGT 53	12.70	12.70	12.70	12.70	12.70	12.70
SO BUILDHGT 53	12.70	12.70	12.70	12.70	12.70	12.70
SO BUILDHGT 53	12.70	12.70	12.70	12.70	12.70	12.70
SO BUILDHGT 53	12.70	12.70	12.70	12.70	12.70	12.70
SO BUILDHGT 53	12.70	12.70	12.70	12.70	12.70	12.70
SO BUILDHGT 53	12.70	12.70	12.70	12.70	12.70	12.70
SO BUILDWID 53	28.50	32.13	34.78	36.38	36.88	36.25
SO BUILDWID 53	34.52	31.74	28.00	31.74	34.52	36.25
SO BUILDWID 53	36.88	36.38	34.78	32.13	28.50	24.00
SO BUILDWID 53	28.50	32.13	34.78	36.38	36.88	36.25
SO BUILDWID 53	34.52	31.74	28.00	31.74	34.52	36.25
SO BUILDWID 53	36.88	36.38	34.78	32.13	28.50	24.00
SO BUILDHGT 54	12.70	12.70	12.70	12.70	12.70	12.70
SO BUILDHGT 54	12.70	12.70	12.70	12.70	12.70	12.70
SO BUILDHGT 54	12.70	12.70	12.70	12.70	12.70	12.70
SO BUILDHGT 54	12.70	12.70	12.70	12.70	12.70	12.70
SO BUILDHGT 54	12.70	12.70	12.70	12.70	12.70	12.70
SO BUILDHGT 54	12.70	12.70	12.70	12.70	12.70	12.70
SO BUILDWID 54	28.50	32.13	34.78	36.38	36.88	36.25
SO BUILDWID 54	34.52	31.74	28.00	31.74	34.52	36.25
SO BUILDWID 54	36.88	36.38	34.78	32.13	28.50	24.00
SO BUILDWID 54	28.50	32.13	34.78	36.38	36.88	36.25
SO BUILDWID 54	34.52	31.74	28.00	31.74	34.52	36.25
SO BUILDWID 54	36.88	36.38	34.78	32.13	28.50	24.00
SO BUILDHGT 55	11.40	11.40	11.40	11.40	11.40	11.40
SO BUILDHGT 55	11.40	11.40	11.40	11.40	11.40	11.40
SO BUILDHGT 55	11.40	11.40	11.40	11.40	11.40	11.40
SO BUILDHGT 55	11.40	11.40	11.40	11.40	11.40	11.40
SO BUILDHGT 55	11.40	11.40	11.40	11.40	11.40	11.40
SO BUILDHGT 55	11.40	11.40	11.40	11.40	11.40	11.40
SO BUILDWID 55	103.24	141.75	175.95	204.80	227.43	243.15
SO BUILDWID 55	251.48	252.17	245.90	257.90	262.06	258.26
SO BUILDWID 55	246.61	227.47	201.41	169.24	131.92	90.70
SO BUILDWID 55	103.24	141.75	175.95	204.80	227.43	243.15
SO BUILDWID 55	251.48	252.17	245.90	257.90	262.06	258.26
SO BUILDWID 55	246.61	227.47	201.41	169.24	131.92	90.70

SO EMISUNIT .100000E+07 (GRAMS/SEC) (MICROGRAMS/CUBIC-METER)

SO SRCGROUP PM-10 1 2 3 4 5 6 7 8 9 10 11

SO SRCGROUP NOx 51 52 53 54 55

SO FINISHED

RE STARTING

RE GRIDPOLR Ptl STA

RE GRIDPOLR Ptl ORIG 0.0 0.0

RE GRIDPOLR Ptl DIST 350.0 400.0 500.0 600.0

RE GRIDPOLR Ptl DDIR 10.00 20.00 30.00 40.00 50.00 120.00

RE GRIDPOLR Ptl DDIR 130.00 140.00 150.00 160.00 170.00 180.00

[illegible]


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RE DISCCART      -31.3    -152.5
RE DISCCART      -31.3    -152.5
RE DISCCART     -184.0     244.5
RE DISCCART     -163.0     244.5
RE DISCCART     -142.0     244.5
RE DISCCART     -121.0     244.5
RE DISCCART     -100.0     244.5
RE DISCCART      -80.0     244.5
RE DISCCART      -60.0     244.5
RE DISCCART      -40.0     244.5
RE DISCCART      -20.0     244.5
RE DISCCART       0.0     270.0
RE DISCCART       0.0     300.0
RE DISCCART       0.0     335.98
RE DISCCART      30.0     335.98
RE DISCCART      60.0     335.98
RE DISCCART      90.0     335.98
RE DISCCART     120.0     335.98
RE DISCCART     150.0     335.98
RE DISCCART     180.0     335.98
RE DISCCART     210.0     335.98
RE FINISHED

```

```

ME STARTING
ME INPUTFIL pok83.met                      (4I2,2F9.4,F6.1,I2,2F7.1)
ME ANEMHIGHT 10.000 METERS
ME SURFDATA  99999 1983                SURNAME
ME UAIRDATA  99999 1983                UAIRNAME
ME STARTEND  83 01 01 83 12 31
ME WINDCATS  1.54  3.09  5.14  8.23  10.80
ME FINISHED

```

```

OU STARTING
OU MAXTABLE ALLAVE 20
OU FINISHED

```

```

*****
*** SETUP Finishes Successfully ***
*****

```

```

*** ISCST2 - VERSION 92062 ***    *** Lamb Weston Operating Permit    PM-10, NO2    ***    05/25/95
***                               ***                               ***    10:57:28
***                               ***                               ***    PAGE 1

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*** MODELING OPTIONS USED:  CONC  RURAL  FLAT                NOSTD        NOCALM
***          MODEL SETUP OPTIONS SUMMARY          ***

```

**Model Is Setup For Calculation of Average CONCentration Values.

**Model Uses RURAL Dispersion.

**Model Uses User-Specified Options:

1. Final Plume Rise.
2. Not Use Stack-tip Downwash.
3. Buoyancy-induced Dispersion.
4. Not Use Calms Processing Routine.
5. Not Use Missing Data Processing Routine.
6. Default Wind Profile Exponents.
7. Default Vertical Potential Temperature Gradients.

**Model Assumes Receptors on FLAT Terrain.

**Model Assumes No FLAGPOLE Receptor Heights.

**Model Calculates 1 Short Term Average(s) of: 24-HR
and Calculates PERIOD Averages

**This Run Includes: 16 Source(s); 2 Source Group(s); and 202 Receptor(s)

**The Model Assumes A Pollutant Type of: OTHER

**Model Set To Continue RUNNING After the Setup Testing.

**Output Options Selected:

Model Outputs Tables of PERIOD Averages by Receptor

Model Outputs Tables of Overall Maximum Short Term Values (MAXTABLE Keyword)

**Misc. Inputs: Anem. Hgt. (m) = 10.00 ; Decay Coef. = .0000 ; Rot. Angle = .0
Emission Units = (GRAMS/SEC) ; Emission Rate Unit Factor = .10000E+07
Output Units = (MICROGRAMS/CUBIC-METER)

**Input Runstream File: lamwestn.in ; **Output Print File: lamwestn.out

**Detailed Error/Message File: ERRORS.OUT

*** ISCST2 - VERSION 92062 *** *** Lamb Weston Operating Permit PM-10, NO2 *** 05/25/95
*** 10:57:28
PAGE 2

*** MODELING OPTIONS USED: CONC RURAL FLAT NOSTD NOCALM

*** POINT SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (USER UNITS)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	STACK HEIGHT (METERS)	STACK TEMP. (DEG.K)	STACK EXIT VEL. (M/SEC)	STACK DIAMETER (METERS)	BUILDING EXISTS	EMISSION RATE SCALAR VARY BY
1	0	.14400E+00	-255.5	-38.1	.0	15.54	535.93	13.90	1.27	YES	
2	0	.58000E-01	-255.5	-32.4	.0	15.54	570.37	9.41	1.01	YES	
3	0	.58000E-01	-255.5	-24.8	.0	15.54	567.04	9.28	1.01	YES	
4	0	.20000E-02	-266.9	-22.9	.0	3.35	491.48	1.32	.63	YES	
5	0	.68000E-01	-76.3	-45.8	.0	11.00	307.04	11.83	1.01	YES	
6	0	.20200E+00	-93.4	.0	.0	13.56	325.93	17.62	.66	YES	
7	0	.16000E-01	-87.7	-66.8	.0	12.77	312.59	.50	3.66	YES	
8	0	.16000E-01	-83.9	-66.8	.0	13.44	312.59	.50	3.66	YES	
9	0	.67200E+00	-91.5	-50.5	.0	14.02	351.48	3.82	1.93	YES	
10	0	.40000E-02	-82.0	-87.7	.0	13.14	309.26	14.53	.27	YES	
11	0	.14000E-01	-61.0	-72.5	.0	10.15	294.26	18.18	.43	YES	
51	0	.14670E+01	-255.5	-38.1	.0	15.54	535.93	13.90	1.27	YES	
52	0	.59600E+00	-255.5	-32.4	.0	15.54	570.37	9.41	1.01	YES	
53	0	.59100E+00	-255.5	-24.8	.0	15.54	567.04	9.28	1.01	YES	
54	0	.20000E-01	-266.9	-22.9	.0	3.35	491.48	1.32	.63	YES	
55	0	.14600E+00	-76.3	-45.8	.0	11.00	307.04	11.83	1.01	YES	

*** ISCST2 - VERSION 92062 *** *** Lamb Weston Operating Permit PM-10, NO2 *** 05/25/95
*** 10:57:28
PAGE 3

*** MODELING OPTIONS USED: CONC RURAL FLAT NOSTD NOCALM

*** SOURCE IDs DEFINING SOURCE GROUPS ***

GROUP ID

SOURCE IDs

PM-10 1 , 2 , 3 , 4 , 5 , 6 , 7 , 8 , 9 , 10 , 11 ,

NOX 51 , 52 , 53
 *** ISCST2 - VERSION 92062 ***

*** 54 , 55
 *** Lamb Weston Operating Permit PM-10, NO2

*** 05/25/95
 *** 10:57:28
 *** PAGE 4

*** MODELING OPTIONS USED: CONC RURAL FLAT NOSTD NOCALM

*** DIRECTION SPECIFIC BUILDING DIMENSIONS ***

SOURCE ID: 1

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	12.7	28.5	0	2	12.7	32.1	0	3	12.7	34.8	0	4	12.7	36.4	0	5	12.7	36.9	0	6	12.7	36.3	0
7	12.7	34.5	0	8	12.7	31.7	0	9	12.7	28.0	0	10	12.7	31.7	0	11	12.7	34.5	0	12	12.7	36.3	0
13	12.7	36.9	0	14	12.7	36.4	0	15	12.7	34.8	0	16	12.7	32.1	0	17	12.7	28.5	0	18	12.7	24.0	0
19	12.7	28.5	0	20	12.7	32.1	0	21	12.7	34.8	0	22	12.7	36.4	0	23	12.7	36.9	0	24	12.7	36.3	0
25	12.7	34.5	0	26	12.7	31.7	0	27	12.7	28.0	0	28	12.7	31.7	0	29	12.7	34.5	0	30	12.7	36.3	0
31	12.7	36.9	0	32	12.7	36.4	0	33	12.7	34.8	0	34	12.7	32.1	0	35	12.7	28.5	0	36	12.7	24.0	0

SOURCE ID: 2

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	12.7	28.5	0	2	12.7	32.1	0	3	12.7	34.8	0	4	12.7	36.4	0	5	12.7	36.9	0	6	12.7	36.3	0
7	12.7	34.5	0	8	12.7	31.7	0	9	12.7	28.0	0	10	12.7	31.7	0	11	12.7	34.5	0	12	12.7	36.3	0
13	12.7	36.9	0	14	12.7	36.4	0	15	12.7	34.8	0	16	12.7	32.1	0	17	12.7	28.5	0	18	12.7	24.0	0
19	12.7	28.5	0	20	12.7	32.1	0	21	12.7	34.8	0	22	12.7	36.4	0	23	12.7	36.9	0	24	12.7	36.3	0
25	12.7	34.5	0	26	12.7	31.7	0	27	12.7	28.0	0	28	12.7	31.7	0	29	12.7	34.5	0	30	12.7	36.3	0
31	12.7	36.9	0	32	12.7	36.4	0	33	12.7	34.8	0	34	12.7	32.1	0	35	12.7	28.5	0	36	12.7	24.0	0

SOURCE ID: 3

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	12.7	28.5	0	2	12.7	32.1	0	3	12.7	34.8	0	4	12.7	36.4	0	5	12.7	36.9	0	6	12.7	36.3	0
7	12.7	34.5	0	8	12.7	31.7	0	9	12.7	28.0	0	10	12.7	31.7	0	11	12.7	34.5	0	12	12.7	36.3	0
13	12.7	36.9	0	14	12.7	36.4	0	15	12.7	34.8	0	16	12.7	32.1	0	17	12.7	28.5	0	18	12.7	24.0	0
19	12.7	28.5	0	20	12.7	32.1	0	21	12.7	34.8	0	22	12.7	36.4	0	23	12.7	36.9	0	24	12.7	36.3	0
25	12.7	34.5	0	26	12.7	31.7	0	27	12.7	28.0	0	28	12.7	31.7	0	29	12.7	34.5	0	30	12.7	36.3	0
31	12.7	36.9	0	32	12.7	36.4	0	33	12.7	34.8	0	34	12.7	32.1	0	35	12.7	28.5	0	36	12.7	24.0	0

SOURCE ID: 4

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1	12.7	28.5	0	2	12.7	32.1	0	3	12.7	34.8	0	4	12.7	36.4	0	5	12.7	36.9	0	6	12.7	36.3	0
7	12.7	34.5	0	8	12.7	31.7	0	9	12.7	28.0	0	10	12.7	31.7	0	11	12.7	34.5	0	12	12.7	36.3	0
13	12.7	36.9	0	14	12.7	36.4	0	15	12.7	34.8	0	16	12.7	32.1	0	17	12.7	28.5	0	18	12.7	24.0	0
19	12.7	28.5	0	20	12.7	32.1	0	21	12.7	34.8	0	22	12.7	36.4	0	23	12.7	36.9	0	24	12.7	36.3	0
25	12.7	34.5	0	26	12.7	31.7	0	27	12.7	28.0	0	28	12.7	31.7	0	29	12.7	34.5	0	30	12.7	36.3	0
31	12.7	36.9	0	32	12.7	36.4	0	33	12.7	34.8	0	34	12.7	32.1	0	35	12.7	28.5	0	36	12.7	24.0	0

*** ISCST2 - VERSION 92062 ***

*** Lamb Weston Operating Permit PM-10, NO2

*** 05/25/95
 *** 10:57:28
 *** PAGE 5

*** MODELING OPTIONS USED: CONC RURAL FLAT NOSTD NOCALM

*** DIRECTION SPECIFIC BUILDING DIMENSIONS ***

SOURCE ID: 5

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
-----	----	----	-----	-----	----	----	-----	-----	----	----	-----	-----	----	----	-----	-----	----	----	-----	-----	----	----	-----

1 11.4, 103.2, 0	2 11.4, 141.8, 0	3 11.4, 175.9, 0	4 11.4, 204.8, 0	5 11.4, 227.4, 0	6 11.4, 243.2, 0
7 11.4, 251.5, 0	8 11.4, 252.2, 0	9 11.4, 245.9, 0	10 11.4, 257.9, 0	11 11.4, 262.1, 0	12 11.4, 258.3, 0
13 11.4, 246.6, 0	14 11.4, 227.5, 0	15 11.4, 201.4, 0	16 11.4, 169.2, 0	17 11.4, 131.9, 0	18 11.4, 90.7, 0
19 11.4, 103.2, 0	20 11.4, 141.8, 0	21 11.4, 175.9, 0	22 11.4, 204.8, 0	23 11.4, 227.4, 0	24 11.4, 243.2, 0
25 11.4, 251.5, 0	26 11.4, 252.2, 0	27 11.4, 245.9, 0	28 11.4, 257.9, 0	29 11.4, 262.1, 0	30 11.4, 258.3, 0
31 11.4, 246.6, 0	32 11.4, 227.5, 0	33 11.4, 201.4, 0	34 11.4, 169.2, 0	35 11.4, 131.9, 0	36 11.4, 90.7, 0

SOURCE ID: 6

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1 11.4, 103.2, 0	2 11.4, 141.8, 0	3 11.4, 175.9, 0	4 11.4, 204.8, 0	5 11.4, 227.4, 0	6 11.4, 243.2, 0																		
7 11.4, 251.5, 0	8 11.4, 252.2, 0	9 11.4, 245.9, 0	10 11.4, 257.9, 0	11 11.4, 262.1, 0	12 11.4, 258.3, 0																		
13 11.4, 246.6, 0	14 11.4, 227.5, 0	15 11.4, 201.4, 0	16 11.4, 169.2, 0	17 11.4, 131.9, 0	18 11.4, 90.7, 0																		
19 11.4, 103.2, 0	20 11.4, 141.8, 0	21 11.4, 175.9, 0	22 11.4, 204.8, 0	23 11.4, 227.4, 0	24 11.4, 243.2, 0																		
25 11.4, 251.5, 0	26 11.4, 252.2, 0	27 11.4, 245.9, 0	28 11.4, 257.9, 0	29 11.4, 262.1, 0	30 11.4, 258.3, 0																		
31 11.4, 246.6, 0	32 11.4, 227.5, 0	33 11.4, 201.4, 0	34 11.4, 169.2, 0	35 11.4, 131.9, 0	36 11.4, 90.7, 0																		

SOURCE ID: 7

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1 11.4, 103.2, 0	2 11.4, 141.8, 0	3 11.4, 175.9, 0	4 11.4, 204.8, 0	5 11.4, 227.4, 0	6 11.4, 243.2, 0																		
7 11.4, 251.5, 0	8 11.4, 252.2, 0	9 11.4, 245.9, 0	10 11.4, 257.9, 0	11 11.4, 262.1, 0	12 11.4, 258.3, 0																		
13 11.4, 246.6, 0	14 11.4, 227.5, 0	15 11.4, 201.4, 0	16 11.4, 169.2, 0	17 11.4, 131.9, 0	18 11.4, 90.7, 0																		
19 11.4, 103.2, 0	20 11.4, 141.8, 0	21 11.4, 175.9, 0	22 11.4, 204.8, 0	23 11.4, 227.4, 0	24 11.4, 243.2, 0																		
25 11.4, 251.5, 0	26 11.4, 252.2, 0	27 11.4, 245.9, 0	28 11.4, 257.9, 0	29 11.4, 262.1, 0	30 11.4, 258.3, 0																		
31 11.4, 246.6, 0	32 11.4, 227.5, 0	33 11.4, 201.4, 0	34 11.4, 169.2, 0	35 11.4, 131.9, 0	36 11.4, 90.7, 0																		

SOURCE ID: 8

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1 11.4, 103.2, 0	2 11.4, 141.8, 0	3 11.4, 175.9, 0	4 11.4, 204.8, 0	5 11.4, 227.4, 0	6 11.4, 243.2, 0																		
7 11.4, 251.5, 0	8 11.4, 252.2, 0	9 11.4, 245.9, 0	10 11.4, 257.9, 0	11 11.4, 262.1, 0	12 11.4, 258.3, 0																		
13 11.4, 246.6, 0	14 11.4, 227.5, 0	15 11.4, 201.4, 0	16 11.4, 169.2, 0	17 11.4, 131.9, 0	18 11.4, 90.7, 0																		
19 11.4, 103.2, 0	20 11.4, 141.8, 0	21 11.4, 175.9, 0	22 11.4, 204.8, 0	23 11.4, 227.4, 0	24 11.4, 243.2, 0																		
25 11.4, 251.5, 0	26 11.4, 252.2, 0	27 11.4, 245.9, 0	28 11.4, 257.9, 0	29 11.4, 262.1, 0	30 11.4, 258.3, 0																		
31 11.4, 246.6, 0	32 11.4, 227.5, 0	33 11.4, 201.4, 0	34 11.4, 169.2, 0	35 11.4, 131.9, 0	36 11.4, 90.7, 0																		

*** ISCST2 - VERSION 92062 ***

*** Lamb Weston Operating Permit

PM-10, NO2

*** 05/25/95

*** 10:57:28

*** MODELING OPTIONS USED: CONC

RURAL FLAT

NOSTD

NOCALM

PAGE 6

*** DIRECTION SPECIFIC BUILDING DIMENSIONS ***

SOURCE ID: 9

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1 11.4, 103.2, 0	2 11.4, 141.8, 0	3 11.4, 175.9, 0	4 11.4, 204.8, 0	5 11.4, 227.4, 0	6 11.4, 243.2, 0																		
7 11.4, 251.5, 0	8 11.4, 252.2, 0	9 11.4, 245.9, 0	10 11.4, 257.9, 0	11 11.4, 262.1, 0	12 11.4, 258.3, 0																		
13 11.4, 246.6, 0	14 11.4, 227.5, 0	15 11.4, 201.4, 0	16 11.4, 169.2, 0	17 11.4, 131.9, 0	18 11.4, 90.7, 0																		
19 11.4, 103.2, 0	20 11.4, 141.8, 0	21 11.4, 175.9, 0	22 11.4, 204.8, 0	23 11.4, 227.4, 0	24 11.4, 243.2, 0																		
25 11.4, 251.5, 0	26 11.4, 252.2, 0	27 11.4, 245.9, 0	28 11.4, 257.9, 0	29 11.4, 262.1, 0	30 11.4, 258.3, 0																		
31 11.4, 246.6, 0	32 11.4, 227.5, 0	33 11.4, 201.4, 0	34 11.4, 169.2, 0	35 11.4, 131.9, 0	36 11.4, 90.7, 0																		

SOURCE ID: 10

IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK	IFV	BH	BW	WAK
1 11.4, 103.2, 0	2 11.4, 141.8, 0	3 11.4, 175.9, 0	4 11.4, 204.8, 0	5 11.4, 227.4, 0	6 11.4, 243.2, 0																		
7 11.4, 251.5, 0	8 11.4, 252.2, 0	9 11.4, 245.9, 0	10 11.4, 257.9, 0	11 11.4, 262.1, 0	12 11.4, 258.3, 0																		
13 11.4, 246.6, 0	14 11.4, 227.5, 0	15 11.4, 201.4, 0	16 11.4, 169.2, 0	17 11.4, 131.9, 0	18 11.4, 90.7, 0																		

Response to Comments and Questions Submitted during a
Public Comment Period on Lamb-Weston, Incorporated (American Falls)
Proposed Tier II Operating Permit (OP) for the Entire Facility

COMMENTS AND RESPONSES

Comment #1:

The information supplied in the Tier II permit application was intended to show that, during the maximum Plant production, the only criteria pollutant which could exceed the 100 tons per year (T/yr) threshold for an operating permit is NO_x from burning natural gas. The Tier II permit application was further intended to show that, except for NO_x potential emissions of all other criteria pollutants are less than 100 tons per year (T/yr). The information provided in the Tier II permit application was not intended to be used to impose limits for production on individual emission units. We believe the inclusion of any limits on criteria pollutants for which the Plant does not have the potential to emit in excess of 100 tons per year (T/yr) is unnecessary. Please review the approach taken by IDEQ to regulating these minor emissions.

Production related information is propriety and confidential. Lamb-Weston provided this data for IDEQ's information only. Lamb-Weston specifically claimed production information as business confidential. Representatives of Lamb-Weston and IDEQ have worked together cooperatively to limit the use of certain production information in this permit. We request the IDEQ continue to work with Lamb-Weston to eliminate all remaining production related information contained in the proposed permit.

Due to the constantly changing market for potato products, it is impossible to predict the future utilization of the individual production lines and fuel burning equipment at the Plant, at any one time. However, the Plant's production capacity is finite and limited by its physical design. Maximum emission levels are similarly limited. Lamb-Weston's intent is to permit emissions for criteria pollutants, except for NO_x at the Plant's maximum capacity, while staying below the 100 tons per year (T/yr) major source threshold. The short-term limits shown in the proposed permit on raw material throughput, natural gas use, and emissions at each individual emission unit would unnecessarily restrict the flexibility of Plant operations, by limiting Lamb-Weston's ability to utilize existing production capacity. Frequent permit amendments would be required to accommodate unpredictable market change. As discussed in IDEQ's technical memorandum, potential emissions for particulate are at "natural minor" levels, as are potential emissions of all criteria pollutants, except NO_x. Permitting the facility at higher levels now would not result in potential emissions for any criteria pollutant over 100 tons per year (T/yr), and would maximize Lamb-Weston's ability to take advantage of existing production capacity. Lamb-Weston reserves the right to provide IDEQ with supplemental information on this issue.

As explained in the Tier II permit application, by limiting the annual usage of natural gas, all other criteria pollutants from the Plant are also limited. Since the Plant cannot produce product without burning natural gas, the particulate emissions and VOC emissions from the production lines are also limited by any limit on natural gas use. The estimated total Plant emissions of criteria pollutants from burning 1099 million cubic feet of natural gas are as follows: NO_x - 63.83 tons/year; CO - 26.17 tons/year; SO₂ - 0.33 tons/year; PM - 27.17 tons/year; VOC - 21.37 tons/year.

The annual limitation on the use of natural gas to 1099 million cubic feet per year effectively restricts the emissions from the Plant to well below 100 tons per year (T/yr) for all criteria pollutants. Lamb-Weston proposed that IDEQ accept this operational limitation in lieu of hourly and in complement with annual limits on individual emission units. Plant wide emissions will be sufficiently controlled in this manner and this limitation is enforceable with natural gas use monitoring and recordkeeping requirements. Please consider this general approach to permitting along with the specific comments set forth below.

DEQ Response: DEQ took into consideration your general comments and made the pertinent and appropriate revisions in the final Operating Permit (OP) accordingly. These revisions can be seen in the SPECIFIC COMMENTS of DEQ's response and in the final Tier II OP. It should be noted that, limiting ONLY the annual usage of natural gas from the entire facility will not limit some criteria pollutants potential to emit (PTE) to less than the 100 tons per year (T/yr) major source threshold. For example, the PTE for PM and PM-10 from the Kice and Pneumafil filters are greater than 100 tons per year (T/yr) each. PTE for these sources are estimated by using the maximum capacity of each source and by excluding the pollution control equipment. Therefore, PM and PM-10 PTE from these sources are NOT at "natural minor" level, as stated in the Lamb-Weston comment.

The actual production numbers, which are claimed by Lamb-Weston to be proprietary and confidential, are not included in the final OP. However, to allow for the facility's to production flexibility, DEQ increased the allowable production rates of the dryers and fryers in the OP to approximately 20% over the proposed maximum production capacities.

Short-term limits on raw material throughput, natural gas use, and some short term emission rates from some emission units were deleted from the proposed Tier II OP.

SPECIFIC COMMENTS

Comment #2: Permit Section, GENERAL INFORMATION, P. 1 of 21. The Plant's zip code should be changed to 83211.

DEQ Response: DEQ revised the final Operating Permit (OP) to reflect this comment.

Comment #3: Permit Section, GENERAL PLANT DESCRIPTION, 1.1 Process Description, Paragraph Two, P. 2 of 21. The level of specificity included in this description is not necessary. Lamb-Weston proposed that this paragraph be deleted.

DEQ Response: DEQ revised that sentence of the final OP to read as follows:
each process line begins with truck delivery of raw potatoes from offsite or from onsite storage areas.

Comment #4: Permit Section, GENERAL OPERATING REQUIREMENTS, P. 2 of 21. Production numbers are proprietary and confidential business information and should not be included in the permit. As discussed in the general comments above, limits on raw material throughput, natural gas use, and emissions at each individual emission unit unnecessarily restrict the flexibility of Plant operations, by limiting Lamb-Weston's ability to utilize existing production capacity. As a result, these conditions unreasonably constrain the Plant's operation. Therefore, the limitations and requirements in 2.1.1 and 2.1.2 should be removed from the permit.

The limitation on natural gas consumption in 2.1.3 should specify a 1000 Btu/cf basis to allow for differences in the quality of gas burned. Lamb-Weston proposes that this section is revised to read:

2.1 General Operating Requirements

2.1.1 The total natural gas consumption of all fuel burning equipment shall not exceed 1099 Mmcf per year (1000 Btu/cg basis), on an annual rolling basis. Records of natural gas use should be maintained on-site for IDEQ's inspection upon request.

DEQ Response: DEQ did not revise the final OP to reflect this comment. Production rates are included in the OP for compliance purposes. However, to allow for the facility's production flexibility, DEQ increased the production rates of the dryers and fryers in the OP to approximately 20% over the proposed maximum production capacities. Actual production numbers that are claimed by Lamb-Weston to be proprietary and confidential business information are not included in the final OP.

Section 2.1.3 of the General Operating Requirements is revised in the final OP to read as follows:

The total natural gas consumption of all fuel burning equipment shall not exceed 1,099 Mscf per year (950 Btu/cubic feet basis), on an annual rolling basis, and as per applicant's submittal.

FROZEN FRIED PRODUCT LINE 1

Comment #5: Permit Section 1.1., Permit Description, Paragraphs 1 and 2, P. 3 of 21. The level of specificity included in Paragraphs 1 and 2 is not necessary. Lamb-Weston proposed that Paragraphs 1 and 2 be deleted and Section 1.1 read:

1.1 Process Description

Emissions from the Line 1 fryer exit the process through a Ducon scrubber, which shares a common exit point with the Line 2 fryer. The scrubber uses a water droplet bath to remove oil droplets in the fryer exhaust for subsequent collection in the water sump.

The blancher and peeler vent only process steam.

DEQ Response: DEQ did not revise the final OP to reflect this comment. It is a typical permitting standard to include process descriptions in all DEQ's operating permits. The inclusion of process descriptions in the OP is considered as a "roadmap" to the air quality compliance officer during inspections.

Comment #6: Permit Section, 1.2.2 Line 1 Deluge Fryer. The numbers 143°F, 117°F, and 131°F are extraneous and should be deleted.

DEQ Response: DEQ revised the final OP to reflect this comment.

Comment #7: Permit Section, EMISSION LIMITS, PP. 3 and 4 of 21. The Ducon Scrubber is attached to the fryer, not the dryer. Next, as discussed in the general comments above, limiting emissions from individual emission units is not necessary to accomplish the regulatory purpose of this Tier II permit. Emissions of particulate and VOC will not exceed 100 tons per year (T/yr), even if the Plant is operated at maximum capacity. Therefore, imposing limits on these emissions is unnecessary. All emissions from the Plant are restricted by limiting natural gas use as proposed in Comment #4.

Lamb-Weston proposed that these paragraphs and associated emission limits be deleted from the permit.

DEQ Response: DEQ revised the final OP to reflect this comment. The PM and PM-10 emission rates from the steam dryers stacks are deleted from the proposed OP. However, PM and PM-10 emissions from the Ducon scrubber stack remained in the OP. The PM and PM-10 short term and long term emission limits are present in the OP for compliance purposes. The calculated potential to emit, after removing the pollution control equipment and based on the source's maximum capacity, for particulates from the Ducon scrubber is 93.53 tons per year (T/yr). Theoretically, sources that are attached to the scrubber (i.e., fryer) can operate higher than their maximum capacities. Therefore, without enforceable permit restrictions, particulate emissions from the fryer can exceed the 100 tons per year (T/yr) threshold limit. Therefore, the inclusion of short term emission limits in the OP is necessary to establish this source's synthetic minor status.

For the PM, SO₂, CO, and VOCs short-term and long-term emission limits, DEQ revised the final OP to reflect this comment.

FROZEN FRIED PRODUCT LINE 2

Comment #8: Permit Section, 1.1 Process Description, Paragraphs 1 and 2. The level of specificity in Paragraphs 1 and 2 is unnecessary. Lamb-Weston proposes that Paragraphs 1 and 2 be deleted and Section 1.1 read:

1.1 Process Description

Emissions from the Line 2 fryer exit the process through a Ducon scrubber, which is a common exit point to the Line 1 fryer. The scrubber uses a water droplet bath to remove oil droplets in the fryer exhaust for subsequent collection in the water sump.

The blancher and peeler vent only process steam.

DEQ Response: DEQ did not revise the final OP to reflect this comment. Please refer to Comment #5 above for DEQ's justifications regarding this comment.

Comment #9: Permit Section, EMISSION LIMITS, P. 5 of 21. The Ducon Scrubber is attached to the fryer, not the dryer. Next, as discussed in the general comments above, limiting emissions from individual emission units is not necessary to accomplish the regulatory purpose of this Tier II permit. Emissions of particulate, SO₂, NO_x, CO, and VOC will not exceed 100 tons per year (T/yr), even if the Plant is operated at maximum capacity. Therefore, imposing limits on these emissions is unnecessary. All emissions from the Plant are restricted by limiting natural gas use as proposed in Comment #3.

Lamb-Weston proposes that these paragraphs and associated emissions limits should be deleted.

DEQ Response: DEQ revised the emission limits from Line 2 Gas-Fired Dryer Stacks to include only the NO_x emission limits in Appendix A of the final OP. Because the NO_x emissions from this source significantly contribute to the facility's overall NO_x emissions, it is necessary to include this limit in the permit to ensure the 100 tons per year (T/yr) emissions is not triggered.

For the Ducon Scrubber Exhaust Stack emission limits, DEQ revised that section of the OP and included the PM and PM-10 short term and long term emission limits. Please refer to Comment #7 for DEQ's justifications.

Comment #10: Permit Section, OPERATING REQUIREMENTS, P. 6 of 21. As described in the general comments above, limiting fuel burning for individual components is too restrictive on the operation of the Plant and provides no additional regulatory benefit. A Plant wide operating restriction on the use of natural gas, as proposed in Comment #3 will effectively restrict NO_x and other criteria pollutant emissions to below 100 tons per year (T/yr). Lamb-Weston proposes that this paragraph be deleted.

DEQ Response: DEQ Revised the final OP to reflect this comment.

Comment #11: Permit Section, MONITORING AND RECORDKEEPING REQUIREMENTS, P. 6 of 21. As discussed in the general comments above, restricting the amount of fuel burned in any individual emission unit unacceptably constrains the operation of the Plant. This restriction is not necessary to accomplish the regulatory purpose of this Tier II permit. All emissions limitations imposed at the Plant will be enforceable by monitoring natural gas use as proposed in Comment #19. Lamb-Weston proposed that this requirement be deleted.

DEQ Response: DEQ revised the final OP to reflect this comment.

HASHBROWN PRODUCT LINE

Comment #12: Permit Section 1.1 Process Description, Paragraph 1, P. 8 of 21. The level of specificity included in Paragraph 1 is unnecessary. Lamb-Weston proposed that Paragraph 1 be deleted and Section 1.1 read:

1.1 Process Description

The peeler and the blancher vent only process steam. Any regulated air pollutant emissions are expected to be below regulatory concern for permitting purposes.

DEQ Response: DEQ did not revise the final OP to reflect this comment. Please refer to Comment #5 for DEQ's justifications.

DEHYDRATION (FLAKE) PRODUCT LINE

Comment #13: Permit Section, 1.1 Process Description, Paragraphs 1 and 2, P. 2 of 21. The level of specificity included in Paragraphs 1 and 2 is unnecessary. Lamb-Weston proposes that Paragraphs 1 and 2 be deleted and Section 1.1 read:

1.1 Process Description

Emissions from the Dehydrated (Flake) Product Line are from two drum dryers and from two process dust collection systems.

DEQ Response: DEQ did not revise the final OP to reflect this comment. Please refer to Comment #5 for DEQ's justifications.

Comment #14: Permit Section, EMISSION LIMITS, PP. 9 and 10 of 21. As described in the general comments above, limiting fuel burning for individual components is too restrictive on the operation of the Plant and provides no additional regulatory benefit. A Plant wide monitoring requirement for natural gas use, as proposed in Comment #3 will effectively restrict NO_x and other criteria pollutant emissions to below 100 tons per year (T/yr). Engineering calculations provided in the Tier II application show that potential particulate emissions from the Plant do not exceed major source threshold.

Lamb-Weston proposed that these conditions and associated emission limits be deleted.

DEQ Response: DEQ revised the final OP and deleted the FM and FM-10 emission limits from the Flake Line Drum Dryer #1 and Drum Dryer #2.

DEQ did not revise the final OP for the Rice Filter emissions. The calculated potential to emit for particulates for that source, based on 8760 hours of operation per year and by excluding the pollution control equipment, is greater than 100 tons per year (T/yr). Therefore, the short term and long term emission limits are retained in the final OP.

DEQ inadvertently did not include the FM and FM-10 emission limits from the Flake Line Pneumafil exhaust in the text of the proposed OP. FM and FM-10 potential to emit from the sources associated with that exhaust is greater than 100 tons per year (T/yr). Therefore, a short and long term emission limits are included in the final OP.

BOILERS, AMUs, AND OTHER SPACE HEATING EQUIPMENT

Comment #15: Permit Section, EMISSION LIMITS, P. 11 of 21. The 40 CFR 60.44b(a)(1)(i) requirement is sufficient to regulate NO_x emissions on a short-term basis. The limit on annual natural gas use provides an annual limit on emissions. Duplicative emission standards may become confusing for operators and are unnecessary. Lamb-Weston proposes Paragraph 2.1.1 be changed to read:

2.1.1 NO_x Emission Limits

NO_x (Oxides of Nitrogen) emissions from the Boiler #1 exhaust stack shall not exceed 0.10 lb/MMBtu as required by 40 CFR 60.44b (a)(1)(i), and the annual emission limit set forth in Appendix A. (as revised in Comment #28)

DEQ Response: DEQ did not revise the final OP to reflect this comment. The hourly NO_x emission limits are included in the final OP for compliance purposes. NO_x emission limits listed in Appendix A of the OP or 0.10 lb/MMBtu as required by 60.44b(a)(1)(i), whichever is more stringent must be met. The pounds per hour limits are included in Appendix A of the OP to ensure these limits are not exceeded if the boiler would operate higher than its maximum rated capacity.

Comment #16: Permit Section, EMISSION LIMITS, PP. 11 and 12 of 21. Potential emissions of these pollutants are not calculated to exceed 100 tons per year (T/yr), as presented in the Tier II application. Therefore, emission limits on these pollutants are not required to accomplish the regulatory purpose of this Tier II permit. Lamb-Weston proposes that these conditions and associated emission limits be deleted.

DEQ Response: DEQ revised the final OP and deleted the SO₂, CO, and VOC emission limits from the OP. However, FM and FM-10 emission limits of 0.015 gr/dscf from Boiler #1 stack are included in the final OP, as per IDAPA 16.01.01.676 of the RULES.

Comment #17: Permit Section , OPERATING REQUIREMENTS, PP. 12 and 13 of 21. As described in the general comments above, limiting fuel burning for individual components is too restrictive on the operation of the Plant and provides no additional regulatory benefit. A Plant wide operating restriction on the use of natural gas, as proposed in Comment #3, will effectively restrict NO_x and other criteria pollutant emissions to below 100 tons per year (T/yr). Lamb-Weston proposes that these conditions be deleted.

DEQ Response: DEQ revised the final OP and deleted the SO₂, CO, and VOC emission limits from the OP. However, PM and PM-10 emission limits of 0.015 gr/dscf from each of the boiler's (i.e., #2, #3, & #4), AMUs, and space heaters stacks are included in the final OP, as per IDAPA 16.01.01.677 of the RULES.

Comment #18: Permit Section, MONITORING AND RECORDKEEPING REQUIREMENTS, P. 13 of 21. It does not appear that 40 CFR 60.46b(3) allows the use of 40 CFR 60.48b(g)(2) for an initial performance test. Please review and clarify. Lamb-Weston proposes that this condition be revised to read (note typo):

4.1 Boiler #1 Performance Test

The Permittee shall conduct a performance test within sixty (60) days upon receipt of this operating permit to determine compliance with the NO_x (oxides of nitrogen) emission standard, as required in 40 CFR 60.46b(e).

DEQ Response: DEQ did not revise the final OP to reflect this comment. 40 CFR 60.46b allows the facility to either use the CEMS for the NO_x performance test or monitor the NO_x emissions through the Predictive Emission Monitoring Plan. Please refer to 40 CFR 60.46b(c), which states that "compliance with nitrogen oxides emission standards under §60.44b shall be determined through performance testing under paragraph (e) or (f), or under paragraph (g) and (h) of this section, as applicable."

Comment #19: Permit Section, MONITORING AND RECORDKEEPING REQUIREMENTS, P. 14. Of 21. As discussed in the general comments above, restricting the amount of fuel burned in any individual emission unit unacceptably constrains the operation of the Plant. A specific restriction on each boiler is not necessary to accomplish the regulatory purpose of this Tier II permit. The emissions limitations imposed at the Plant will be enforceable by monitoring Plant wide natural gas use. Therefore, Lamb-Weston proposes to delete Paragraph 4.4.2 and change Section 4.4 to read:

4.4 Fuel Consumption Monitoring

The Permittee shall install, calibrate, maintain, and operate natural gas flow monitoring equipment to monitor total natural gas consumption of the facility.

DEQ Response: DEQ revised the final OP to reflect this comment.

Comment #20: Permit Section, MONITORING AND RECORDKEEPING REQUIREMENTS, PP. 14 and 15 of 21. For the reasons stated in Comment #20 above, Paragraphs 4.5.3, 4.5.4, and 4.5.5 should be deleted and Section 4.5 should read:

4.5 The Permittee shall monitor and record the following operating information:

4.5.1 Date; and

4.5.2 The total cumulative volume of natural gas fuel consumed by the facility on a quarterly basis. Quarterly is defined as a three (3) month period during a calendar year.

DEQ Response: DEQ revised the final OP to reflect this comment.

Comment #21: Permit Section, REPORTING REQUIREMENTS, P. 15 of 21. Lamb-Weston proposes to substitute the last word in this condition with "completed" instead of "conducted" to clarify when the report is required to be submitted.

DEQ Response: DEQ revised the final OP to reflect this comment.

Comment #22: Permit Section, REPORTING REQUIREMENTS, P. 15 of 21. Lamb-Weston proposed to substitute the last word in this condition with "completed" instead of "conducted" to clarify when the report is required to be submitted.

DEQ Response: DEQ revised the final OP to reflect this comment.

Comment #23: Permit Section 5.5 Predictive NO_x Emissions Monitoring Plan for Boiler #1, P. 16 of 21. 40 CFR Part 60 requires submittal of the Predictable Emissions Monitoring Plan to EPA. As proposed, this permit condition requires submittal to IDEQ only. Lamb-Weston's understanding of the federal regulation would require submittal to EPA; however, a copy of the plan could voluntarily be submitted to IDEQ for review. Please review and clarify this requirement.

DEQ Response: DEQ did not revise the final OP to reflect this comment. The New Source Performance Standards (NSPS) is incorporated in the DEQ rules by reference (please refer to IDAPA 16.01.01.107.03.v). Therefore, the NSPS rules in IDAPA are effective rules with which Lamb-Weston must abide. Therefore, Lamb-Weston must report the NO_x Predictive Emissions Monitoring Plan for Boiler #1 to DEQ.

Because the IDAPA 16.01.01.107.03.v is not yet approved into Idaho's State Implementation Plan (SIP), Lamb-Weston also must report the NO_x Predictive Emissions Monitoring Plan to EPA.

Comment #24: Permit Section, P. 16 of 21. As discussed in the general comments above, restricting the amount of fuel burned in any individual emission unit unacceptably constrains the operation of the Plant. This type of restriction is not necessary to accomplish the regulatory purpose of this Tier II permit. All emission limitations imposed at the Plant will be enforceable by monitoring natural gas use as proposed in Comment #19. Lamb-Weston proposed that Sections 5.7.2, 5.7.3, and 5.7.4 be deleted and that this condition read as follows:

5.7 Fuel Consumption Report

The Permittee shall submit to the Department an annual fuel consumption report, which shall include the total natural gas fuel consumption of the entire facility.

DEQ Response: DEQ revised the final OP to reflect this comment.

RECEIVING, TRANSFER, AND SHIPPING OPERATIONS

Comment #25: Permit Section, P. 17 of 21. The wording about raw storage should be changed as follows to better indicate that there are several raw storage areas:

1.1 Process Description

Trucks deliver potatoes to the site. Transfer operations of raw potatoes take place in two (2) enclosed areas, the receiving areas of the main building and the raw storage building area. End products are shipped from the plant site by trucks. Plant roads are largely unpaved, but a portion is paved.

DEQ Response: DEQ revised the final OP to reflect this comment.

Comment #26: Permit Section, EMISSION LIMITS, P. 17 of 21. Fugitive dust emissions are controlled by the requirements of IDAPA 16.01.01.650. The requirement states that fugitive dust emissions shall be reasonably controlled. The Idaho Rules for the Control of Air Pollution do not prescribe specific emission standards for fugitive dust, just reasonable control measures. Moreover, the fugitive dust control rules do not refer to the opacity standard as applicable to these emissions. Therefore, Lamb-Weston proposed that this Section should be revised to read:

2. EMISSION LIMITS

2.1 Fugitive emissions generated from transfer points, roads, and all other sources of fugitive emissions shall be reasonably controlled in accordance with IDAPA 16.01.01.650 (Rules for the Control of Air Pollution in Idaho).

DEQ Response: DEQ revised the fugitive emission limits from the transfer points and roads emissions to read as follows: Fugitive emissions generated from transfer points, paved/unpaved roads, and all other sources of fugitive emissions at the facility shall be reasonably controlled in accordance with IDAPA 16.01.01.650, and IDAPA 16.01.01.651 (Rules for the Control of Air Pollution in Idaho).

Comment #27:

Permit Section, OPERATING REQUIREMENTS, P. 17 of 21. Upon revision of Section 2, as proposed by Comment #27. Lamb-Weston proposes that Section 3 would appropriately read (note typo):

3. OPERATING REQUIREMENTS

3.1 Control of Fugitive Emission

Some of the reasonable precautions may include, but are not limited to, the following:

3.1.1 Use of water or environmentally safe chemical dust suppressants;

3.1.2 Use of control equipment or enclosures; and

3.1.3 Paving of haul roads.

DEQ Response:

DEQ revised the final OP to reflect this comment.

Comment #28:

Permit Section, APPENDICES, PP. 18 and 19 of 21. Emission limitations shown in Appendix A and Appendix B. As stated above, emissions limitation need not be specified for individual fuel burning components or other emission units because it unnecessarily limits the operating flexibility of the Plant without providing any additional regulatory benefit. Plant wide restriction of natural gas use will effectively limit emissions of all criteria pollutants from the facility. In all cases (except of NO_x), potential emissions of criteria pollutants are all less than 100 tons per year (T/yr), even considering maximum production capacity.

Furthermore, these emission unit specific limits are not practically enforceable, and would require the facility to install monitoring devices not otherwise required by regulation. Engineering calculations and limited source test data presented in the Tier II application confirm the appropriateness of limiting Plant wide natural gas use, only, as the means to control all emissions from the facility. Therefore, Lamb-Weston proposed that Appendices A and B be combined into a single table as follows:

Lamb-Weston, Incorporated - American Falls Source Emission Limits						
Source	PM T/yr	PM-10 T/yr	SO ₂ T/yr	CO T/yr	NO _x T/yr	VOC T/yr
Fuel Burning	4.77	4.77	0.33	26.17	63.83	1.5
Processing	22.4	22.4	-----	-----	-----	20.07
Plant Total	27.17	27.17	0.33	26.17	63.83	21.57

Note: The above emission limits are based on the burning of no more than 1099 million scf of natural gas (1000 Btu/cf basis) per year. Compliance with the emission limits is demonstrated by recording annual natural gas usage on an annual rolling average.

DEQ Response:

DEQ revised Appendix A of the final OP and included short term and long term emission limits for sources at the facility which have potentials to emit that are greater than 100 tons per year (T/yr). These sources are Boiler #1, Rice filter, and Pneumafil Reverse Air filter. The Ducon scrubber emissions are also included in Appendix A. Please refer to Comment #7 for the reason for its inclusion. The AMUs and Space Heaters emissions are included in Appendix B to ensure all NO_x emissions from all sources at the facility remain below the 100 tons per year (T/yr) threshold limit.

U.S. Department of the Interior - Fish and Wildlife Service

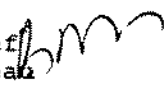
Comment #29: From a cursory review of the public notice, the Service has concerns regarding migratory birds. If stacks are involved in the emission of toxic pollutants, we recommend that measures be taken to prevent birds from entering these stacks. Data indicate migratory birds may be overcome by fumes upon entry into stacks.

DEQ Response: DEQ did not revise the final OP to reflect this comment. Concerns regarding migratory birds are not substantiative to Lamb-Weston's Tier II OP. This specific concern should be directed to the appropriate local, state, and federal agencies.

December 27, 1995

MEMORANDUM

TO: Orville Green, Assistant Administrator
Permits and Enforcement

FROM: Brian R. Monson, Chief 
Operating Permit Bureau

SUBJECT: Issuance of Tier II Operating Permit #077-00017 to
Lamb-Weston, Incorporated (American Falls)

PURPOSE

The purpose of this memorandum is to satisfy the requirements of IDAPA 16.01.01 Sections 400 through 406 (Rules for the Control of Air Pollution in Idaho) for issuing Operating Permits.

PROJECT DESCRIPTION

This project is for an Operating Permit for the Lamb-Weston facility located in American Falls, Idaho. Emission point sources existing at the facility are as follows: four (4) natural gas-fired boilers with various capacities, two (2) dryers (natural gas & steam), two (2) drum dryers (steam), and two (2) fryers. Fugitives emissions sources found at the facility are as follows: transfer operations, paved and unpaved roads, and AMUs (air makeup units) and space heaters.

SUMMARY OF EVENTS

On January 17, 1995, the Division of Environmental Quality (DEQ) received an application for a Tier II Operating Permit. On April 12, 1995, that application was determined complete. On September 12, 1995, a proposed Tier II OP was issued for public comment.

RECOMMENDATIONS

Based on the review of the Operating Permit application and on applicable state and federal regulations concerning the permitting of air pollution sources, the Bureau staff recommends that Lamb-Weston, Inc., American Falls, be issued a Tier II Operating Permit. Staff also recommend that the facility be notified in writing of the obligation to pay permit application fees for Tier II permits.

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cc: J. Johnston, EIRO
H. Elshafei
OP File Manual
Source File
COF